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HOW TO MAKE HOME ECONOMICS WORK FUNCTION[1]

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In considering the topic "How to Make Home Economics Work Function" we should ask ourselves these questions: First, what is the place of home economics in the education and development of the child, what is its purpose, of what value should it be? Second, is it fulfilling its purpose, are these values being realized or are the results disappointing? Third, if they are not satisfactory, what are the reasons; where are the weak points and what suggestions can we offer for making the work function as it should?

Should not the purpose of home economics work be two-fold? Should it not aim to make more intelligent homemakers and better women citizens, thus being of direct help to young women in their own life experiences, and at the same time should it not vitalize their education, and train their minds and intellects?

Our home economics work should prove these values. It should make more truly capable and intelligent women, women who are sympathetically awake to the difficulties of others and to problems of social welfare, women who are ready and able to take up and bear their share of the duties of life. If it is functioning *educationally* it should help to shape their attitude of mind, their habits of thinking, their powers of reasoning, their standards of appreciation, their bases of choice. It should be of value in controlling their conduct.

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With these aims and purposes in mind can we conscientiously claim that home economics work the country over is functioning as it should? Do the young women as they go out from our schools carry into their lives, or into the communities in which they are working, the principles of scientific management taught them in school? Do they work more efficiently? Do they choose foods wisely for themselves and for others? Are they able to select and prepare food properly for sick people as well as for those in health? Do they have a skill and knowledge which will enable them wisely to feed children, or a large number of working men; to serve a dainty artistic luncheon to a few friends, or to manage a big dinner for a large group of people? In every case do they consider cost and amount of work? Are they able with a small amount of money to furnish a home which is simple, dignified, restful, comfortable, and yet aesthetic? Can they manage that home at moderate cost? Have they not only developed the ability to sew and construct; but have they a knowledge which will make them wise choosers? Do they possess a knowledge of materials, their proper value and use? Do they dress appropriately, becomingly, artistically? Do they understand the hygiene of clothing, its importance as a factor in maintaining health, and do they know how to take the proper care of clothing? Do they know the value of money and the need of reasonable economy in spending it; can they interpret a dollar in terms of work? Have they a larger comprehension of what money means, and better habits in regard to spending it so that the results of the outlay may give more satisfaction than they have given in the past?

Have they developed a feeling for good line, good form, good proportions, good colors and combinations so that they will desire those things in their own clothes, in their homes, in their everyday surroundings? Have they developed an appreciation, an understanding of the work of the masses, a sympathy for the worker, a respect for honest labor, a spirit of social usefulness which will make itself felt in any community in which they are placed? Do they as consumers and shoppers realize their ethical obligations with reference to the life and occupations of workers?

I think that we shall have to acknowledge that this training which the schools are attempting to give does not function in the students' lives nor in the communities which they represent as we feel that it should; the work of the school does not have the vital relationship with the immediate world in which the child lives that it ought to have.

Many of the children do not develop the skill and technique which we should like to see developed, and fewer yet realize or attain the educational value which is embodied in the work.

Why? We should be asking ourselves the question—Why?

A few possible reasons, a few suggestions, I wish to present for discussion. While developing technique, knowledge of processes, skill in manipulation, have we emphasized the educational values as much as we might, as much as we *should* have? Do we in the grades, high school, or even in our higher institutions of learning, make adequate provisions for the elements of thought content and appreciation? In all home economics subjects there is, we realize, a rich body of knowledge and material for appreciation of values and worths which we call liberal education or culture, but, partly because of the recent demand for a higher degree of skill and technical efficiency in the industrial worker and partly because motor development has been made an end point, relatively small provision has been made for these elements of thought content and appreciation. They have been largely by-products. The vocational motive has dominated the work.

For instance, in the sewing classes in our schools today are we giving proper emphasis to the textile side of the work? Do the children learn the extent of the textile industries, their history, their commercial and industrial geography, their relation to fine arts? Do they know anything of the lives of the workers in the industries and of their further social relationships to the children of the school itself? Is their judgment trained to estimate values in materials, to appreciate the art element in all textile products? Are they more intelligent choosers, wiser buyers? In the food work do the children realize the conditions under which the preparation and manufacture of different foods are accomplished; the scientific elements involved in these processes? Are they made to realize the importance of hygienic consideration of both foods and clothing? Do they sense the vast significance of the great army of workers engaged in the preparation and manufacture, distribution and storage of all our food products, and have they developed an appreciation of the meaning of these industries to the individual workers?

It is out of such work that our young people will develop larger interests in present world peoples and their activities; therefore I would offer as one suggestion for the better functioning of home economics educationally, that more emphasis be placed upon the rich body of thought content and knowledge contained in our home economics work.

The field offers material for study within the range of capacity and within the appreciation of every grade in the elementary school.

We must realize that the utilitarian value is not the only object of home economics training, that those interested in promoting education today are trying to make the school room work as much as possible a training to prepare the pupils for actual life conditions; so while the construction of garments, and the preparation of food is an important part of the work, other phases of cultural and educational value should be introduced and carried with it, the subject matter being adapted to the age, the needs, the development, and the knowledge of the children.

We often hear this statement, "I cannot give very much of that work. The students are not interested in it, they do not enjoy it. The work in our school is elective and if I require much of that work the students will not elect it." This brings me to another point which I wish to open for discussion, namely, our methods of teaching. Have our modern methods in education been taken over and used in the teaching of home economics subjects as they have been in other lines of work? Are our home economics teachers as alert in trying out new methods, in keeping up with the yearly advance in methods of teaching? When the socialized recitation work came in as an effective, modern educational method it was at first thought possible only for certain courses, such as history or English. Gradually teachers realized its value and today it is being successfully used in most of our grade and high school subjects. Teachers of home economics were slow in adopting it, but finally our more progressive ones, aiming to meet the awakening interests of pupils and interested in the mental development of the children, began to use it in their class and laboratory work. Those teachers today recognize its value in training the mind, in arousing the social conscience and in awakening the sense of responsibility.

The "Problem-solving" method of instruction followed. Educators today claim that class-room work and laboratory exercises if most effectively taught, should grow out of problems. These problems are chosen to make a personal appeal, to be of interest to the pupils and to be typical of problems which confront people in everyday life. In the solving of these problems, reflective, purposive thinking and reasoning on the part of the students are called for. The teacher's duty in assisting and stimulating pupils in problem solving is to define the problem carefully and keep it clearly before the pupils, to assist them in analyzing the problem, in recalling as many related ideas as possible;

to aid them in correlating facts and principles gained from their previous knowledge that may bear upon the present question; to lead them to criticise the suggestions recalled; to eliminate those which have no bearing on the problem, to select those which do; to organize the material as it is given, using outlines, tabulations, graphic representations, and other methods. Do you see the educational value in such a method of teaching if well done? Educators have found this reflective, purposive thinking and the development of this type of mental activity extremely important. They realize that conditions of life both for society as a whole and for individuals are continually changing and the ability to deal with new problems and new situations should be developed early.

Again home economics teachers adopted this method slowly, but those who are using it today realize that much of their work in the grades and high school may be based on typical problems of every day life, for example: "What foods will give me the best investment for my money?" furnishes a problem on which may be based a lesson on comparative economic values. "What foods are best suited to different members of my family?" should prepare a class for a lesson on dietetics. "What food materials are necessary in order to keep my body strong and to help it to grow?" will give one opportunity for a lesson on food principles. "Why I should pay more for linen than cotton," would lead naturally to a lesson on costs of materials. "In what ways do clothes affect my character?" will interest a class in a discussion of the ethics of dress. "How can I keep my clothes looking attractive?" "What furnishings do I need for my bedroom in order to have it attractive, convenient, and sanitary?" and "How can I best distribute a certain income for food, clothing, shelter, recreation?" would furnish problems for lessons on care of clothing, house decoration, and house administration.

Most of our home economics work can easily grow out of problems which will be of real interest to the pupils and at the same time will be typical of those that confront people in every day life. Our methods of teaching, then, should be up-to-date. Our home economics teachers should be educated women, women with a good science and art background, with good technical knowledge and good pedagogical training and ability, women who are examples of what they teach, who exemplify in their own lives the underlying principles of home economics; who carry into their dress, into the management of their work and lives and into their civic and social interests the doctrines they teach.

Another means of making our home economics work function in the lives and homes of our girls is by creating less artificial conditions for the work. A few of our more progressive schools are already realizing that the small quantity cookery must be eliminated, that our equipment must more nearly approximate home equipment, our laboratories be more nearly like our home kitchens. Food principles and processes must be taught by placing the food work on a meal basis, that basis being determined by the teacher's knowledge of the home conditions and of the financial status of the families in that community, so that attractive and wholesome meals are planned which come within the means of any group.

Another reason why our home economics work is not functioning better is because not enough time in school can be given to the work for the students to have sufficient practice to develop the skill in technique and the speed which is necessary for efficient work. Very little skill in bread-making is developed from one or two bread lessons. Very little skill in dressmaking is acquired from the making of *one* garment of a type. It takes practice to make perfect. The "home project" work as a solution to this problem has been agitated for years. It is being used in many schools with varying degrees of success and in many others it has been tried and rejected. The home project work is difficult to manage, there are serious difficulties connected with it, such as the problem of properly supervising it, the opportunity for dishonest reports; but it seems to be the only solution to this problem of giving the students more practice in applying the processes and principles developed in class room work. It deserves more study and thought and time on the part of teachers and administrators.

Another criticism that we often hear of the home economics work is that the students are able to secure successful results in the food laboratory or to make an attractive garment in the sewing laboratory but that they seem unable to do it outside of school. This is partly due to the fact that they have not practice enough under supervision to develop initiative, independence, confidence, and skill in doing, and partly to the fact that the instruction has been largely the giving of individual help rather than the logical development of the processes and principles which underlie any particular phase of the work.

For instance, when a class finishes a course in undergarment making should they not have mastered the processes of undergarment making and be able not only to duplicate the particular garment on which they may have made application of certain processes but be able to make

any type of undergarment? General class presentations should be made, then, of every process and principle and the whole class should be held responsible for them.

One other question we should be asking ourselves is this: "Do students who are especially poor in some particular phase of the work, who have very little knowledge of it and practically no skill in doing it, get more or less training in that work than the students who already possess more ability and greater knowledge of that particular phase of the work?" For instance: In meal service, if guests are invited, is it not the tendency often on the part of the teacher to have the person who is most capable in serving do that work, to have the food prepared by those who the teacher knows will make a success of it in order that the meal may go off well, while the students who *need* that training the most are kept at work on some phase of the work that they already know? To take an example from clothing, do the students who know the *least* about fitting, who are especially poor in it, get the opportunity to do extra work in fitting or are the students who have more skill along that line called upon whenever the occasion for more work arises? Or do we still have teachers who do the most of the fitting themselves, because it saves time and the results are better and the students prefer it, the students going out from those classes with little more knowledge of fitting than when they entered?

Are we adapting our work to the needs of our students, to their age, their ability, their knowledge? Are we adapting it to meet changing conditions—economic, social, intellectual? If so then we cannot be giving the same course year after year though that may be the easy thing to do. For instance, with the textile situation changed as it was by war conditions what changes did that make last year in your work in textiles and clothing? Did not every conscientious home economics teacher, in order that her clothing work might function, give added emphasis to the economics of dress? Did she not feel the importance of discussing the planning of economical wardrobes, economy in buying, means of making clothes last longer, the uses of old clothes; and did she not in her laboratory work stress repair and remodeling?

It is only by adapting our work and meeting changes of this kind that we can hope to establish that vital relationship between it and the immediate world in which the child lives, that we can hope to have this work function as it should in the every day life of the students and in the communities of which they are a part.

A COURSE FOR HOME DEMONSTRATION AGENTS; THE ILLINOIS PLAN[1]

MAMIE BUNCH

State Leader of Illinois

With the development of the Home Demonstration Service in Illinois it became apparent that the experience gained from our pioneering should be made available as a guide and time saver to beginners in the extension field.

We have found that certain terms need definition, that certain matters of administration may be learned before hand rather than forced upon one through experience, that certain sociological and economic conditions are common to many fields; that certain pedagogical and psychological principles are common to both class and extension instruction though the method of application is altogether different in class room and field work. These matters may all be made available to candidates for extension service, through class instruction.

The machine through which the home demonstration agent functions has been sufficiently developed so that candidates may become familiar with it through class work. The relation of the Home Bureau, her special part of the machine, to the entire States Relations Service mechanism should be learned by the agent before she goes into the field. It is equally necessary for her to learn her relation to the Home Bureau and she should become familiar with its organization and operations.

Since the Home Bureau in Illinois is somewhat different in organization and management from that of other states, it may be well to mention certain points. We feel that the Home Bureau affords an excellent opportunity for our women to acquire some knowledge of the business of citizenship; accordingly the management of the Home Bureau is placed in the hands of the women who compose its membership. The Home Bureau of each county is incorporated under the state law; the women pay a membership fee; the treasurer is bonded, and the business of the bureau is conducted according to the constitution and by-laws suggested by our organizer and adopted by each bureau, with such local modifications as may be necessary. The president is selected with the idea of securing not only a good presiding officer but a woman who can win the coöperation of other organizations. The vice-president, in

[1] Presented at the meeting of the Extension Section, Twelfth Annual Meeting of the American Home Economics Association, Blue Ridge, N. C., June, 1919.

addition to the usual duties of the office, has charge of the social affairs and is selected accordingly. The secretary has charge of the publicity; so journalistic ability is considered the basis of choice for this office. The treasurer is preferably a business woman.

The work of the bureau is outlined under five main heads; food, clothing, health and sanitation, household management, and neighborhood interests, with a county chairman for each, and a sub-chairman in each township. We have, at present, seventeen home bureaus so organized, with a membership of 11,000 representative, rural women.

Within the limits set by the state program as presented by the organizer the bureau decides what it wishes to do and where it wishes to place special emphasis; that is, theoretically it does, for often a county is so content, that except in the case of a few leaders there is no feeling of need of anything beyond what it has been used to, and the agent or the organizer has to waken a community to a recognition of a need for improvement. However, the local bureau decides finally what is to be done. The bureau selects its own adviser or agent for a term of three years from a group of candidates recommended by the Extension Appointments Committee at the University. This committee consists of the vice-directors of the Extension Service, the senior members of the house staff in foods, in textiles, and in administration.

The committee requires some definite qualifications for county agents in Illinois. Chief among these are a degree with major in home economics from a four year course in a university or recognized technical college, a pleasing personality, ability to work with people, and a knowledge of life and maturity of judgment indicated by at least five years' experience in teaching or in lecturing and demonstrating or in actual farm life. Preference is given, other things being equal, to candidates brought up on a farm. Candidates likely to meet these requirements are invited to attend our summer school.

We regard the extension field as being of vital importance to the whole home economics movement, for through it we not only find problems for laboratory solution but prove the service of the laboratory contributions toward simplifying methods, and developing better standards of home life; therefore the greatest care is used in the selection of our field workers.

Many candidates for extension work are moved by a genuine impulse to serve but have a very superficial conception of either the requirements of the field or their own particular fitness for the type of work

necessary. Others are merely in search of a job, but it is evident that only applicants who have an appreciation of the importance of the work and the qualifications required for success in it will meet the approval of this committee.

When girls from our own college show an aptitude for extension service we advise them in selecting their elective courses to have journalism, rural sociology, public speaking, and physical training in mind as particular assets.

The first essential for successful extension service is the recognition of the ultimate aim of extension work. Miss Bane, our organizer, at a recent Home Bureau conference defined this aim as follows: To develop every home into an institution which is economically sound, mechanically convenient, physically healthful, morally wholesome, mentally stimulating, spiritually inspiring, socially responsible, a center of unselfish love.

To attain this aim the housewife must realize that housekeeping is a means to an end—a means to secure a finer development of individual life and more wholesome contribution to community welfare.

It is the task of the home demonstration agent to bring to her field the contributions our college classes and laboratories have found to be of genuine worth from science, art, system, and invention, to aid in this development of home life.

The Home Bureau needs direction in determining what is most worth while, and in so using the contributions of home economics in the solution of its problems as to make the simple necessary tasks so interesting in the performance that housekeeping becomes a joy rather than a drudgery, and that homemaking becomes a patriotic service of the highest order.

The second essential is the view point. You may recall the story of the three artists who, strolling through the countryside together, on reaching the brow of a hill, exclaimed in unison at the beauty of a bit of landscape before them. One said, "Let us each sketch it and compare our sketches." They did so. The result was three totally different pictures. One was delighted with a particularly symmetrical tree in the near foreground. In his sketch, the tree was drawn with great fidelity, and the meadows, hills, and clouds subordinated to the splendid tree. One saw particularly the wonderful play of light and shadow on the meadows, and that was the outstanding feature of his sketch. The other was impressed by the breadth of the vista, the broad open spaces

and the wonderful gradient of tones defining the ranges of hills in the distance. In his picture, each detail was depicted in due relation to the whole scene. The tree was there but as an incident. The light and shadow were caught also but only as they emphasized the larger view.

So with equal scholastic preparation, each home demonstration agent will interpret the needs of her particular field in the light of her own experience, aptitude, and sensitive reaction; therefore the high lights in the vision as it unfolds to the individual consciousness of each prospective agent need comparison as to value, and the medium through which results are to be obtained must be studied. A study of the relative values of local problems in their relation to the whole scheme is also essential. Some of these typical conditions will come up for analysis in our school. For instance, in one rich county where the child welfare work had discovered, through its weighing and measuring, an astonishing number of subnormal children, the Home Bureau selected an adviser who had had special training in nutrition. The problem of bringing these children up to normal through proper diet, furnished her first point of contact with her county, and within a short time she was directing dietaries in fifty families who reported to her each week. She thus got her contact with her people by demonstrating the value of diet in disease, and so secured an interest in our chief food project, the planning of meals for normal diet, where the emphasis is placed upon wisdom in selection and simplicity in the preparation and service of food, the basis for all our food demonstrations, other than in food conservation projects.

A recognition of the fact that each community has in it all the ability necessary to its own development, lies back of every item of extension policy in Illinois. It is not our task to do any community's work for it, but to help discover its needs and to show the ways by which the community may meet those needs.

Many good teachers and demonstrators are poor executives. They find it easier to do than to get others to do. This is often due to lack of systematic mechanical plans for a distribution of effort. The Home Bureau usually has among its members representatives from all the woman's organizations in the community. The home demonstration agent must discover the contribution each group represented can make to the general project of home improvement she has in hand. Examples from the field indicate methods used in obtaining coöperation of such a nature as to distribute effort and responsibility. Practical plans for

executive details have been developed to a considerable extent and will be presented in class work for the benefit of candidates, for a successful home demonstration agent must be a good executive.

An agent may present an excellent lecture or demonstration, but may not know how to follow up her instruction and discover how it is being utilized in the homes of her patrons; but, since the Home Bureau is valuable to a member just in proportion to the effort she makes to apply its teaching to her daily tasks, one of the first things an agent must acquire is the ability to get her patrons to practice her teaching and report the results. As an aid to this end a definite plan or project which the members have had a part in making has been found most helpful. The technical details of forming these working plans may be acquired. The necessary points must be discovered and the effort distributed in such a way as to interest the greatest number. It requires practice to state clearly and simply a practical plan of work in project form. An agent should acquire some facility in writing practical projects before she goes into the field to write one with her bureau. This we take up in our training classes.

Women who come to the extension field from teaching are not as a rule particularly clever in organizing their offices. In entering a new field they do not know just how to file bits of information which may be necessary for later use. They need convenient record forms. Experience in the field has shown that much time and energy may be saved, and much effort more wisely directed by teaching agents these phases of office organization before sending them into a county.

The bibliography of the extension field and publicity methods may likewise be taught and become a part of the prospective agent's professional capital.

The women of the Home Bureau are not much accustomed to business or the necessary equipment for carrying on the business of an office; therefore a knowledge of necessary office equipment and the items of a probable budget of annual expenditures for the office form another essential bit of the agent's capital stock.

The technique of demonstration teaching must be acquired. Commercial firms have been quick to realize the spectacular advertising value of the demonstration method. Many of the commercial demonstrators are clever, alert, attractive business women who have become very skilful in presenting their particular subjects. They achieve good looking results and talk glibly if not always accurately while they work.

The average woman does not discriminate between the entertaining advertiser and the instructor. Our demonstration agent with at least five lines of demonstrations must compete with these commercial demonstrators who have become adept manipulators in one line; so it is essential that all our agents acquire a fine technique. They must show not only an attractive finished product, they must determine also what demonstrations best set forth the principles they wish to establish. The technique of demonstration teaching therefore is made prominent in lecture, discussion, laboratory, and actual field work with rural units of the Champaign County Home Bureau before whom demonstrations in food, clothing, home nursing, and household equipment are made with plans for securing results in the homes represented.

Our work in Illinois is developing slowly but we think it on a safe permanent basis. As soon as we find what seems wise to recommend we confer with our bureaus and their agents concerning it. Members of the executive boards of the Home Bureau are always invited to our home demonstration conferences and we find their presence and interest of great value to the work of their respective counties.

Having considered the various items cited in this paper, we are presenting to candidates for extension service, in our six weeks summer course, studies in rural life as it is; the relation of rural wealth and income to improvement; the relation of agricultural agencies to rural problems; the organization of the extension movement (legal basis, financial policy, relation to other agencies); existing organizations in Illinois, their nature and scope; needs of the rural community, educational, religious, sanitary, social; organization of Home Bureau work in a county; the pedagogy of extension teaching; methods of extension teaching; office organization and management, records, bibliography, illustrative material, publicity, reports; project, (writing, developing, and reporting projects); the technique of demonstration with actual field work under staff specialists.

If funds and properly equipped agents can be found, we will establish other Home Bureaus as fast as the sentiment of a county crystallizes into an organization of housewives willing not only to support the work financially but to receive and apply in their homes the instruction given.

We have learned how timely now is the instruction of Paul to the Galatians. "Let every man prove his own work, then shall he have rejoicing in himself alone and not in another. Let him that is taught in the word communicate unto him that teacheth in all good things."

RECONSTRUCTION IN RELATION TO HOME ECONOMICS

ALICE RAVENHILL

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Why is there so insistent a call at this juncture for the reconstruction of the national life and in what ways does this call affect home economics?

In the first place, the disintegrating forces associated with a great war have been active in four continents for as many years. Among the chief of these may be mentioned the premature death of millions of vigorous young men, a reduced birthrate, and, in many places, an increased rate of child mortality. Much sorrow and suffering have vastly diminished the nervous energy of adults; grievous famines and plagues still further undermine human vitality, while multiple minor dislocations are associated with the resultant shortage of food, fuel, clothing, and recreation. An exhausted world calls for reinvigoration, in which process judicious reconstruction must play an important part.

In the second place, the magnificent patriotism which expressed itself during these years as the "will to die" for the world's well being must now assume another, but equally praiseworthy form, namely, so to live that the finest type of humanity may be the result. Believing as we do that the object of home economics is the right care and conduct of human life in the home, this dual appeal comes to us with intense urgency. It is our privilege and our responsibility to respond to this demand, to safeguard human life at its source and to maintain it throughout its existence at the highest level of efficiency.

I propose, therefore, to discuss my subject very briefly from two points of view: (1) the reconstruction which springs from a recognition of weak points in the original structure; (2) the reconstruction necessitated by a call for expansion, in order to accommodate increased demands on space. The first form, namely, a recognition of weak points and the determination to reinforce them, calls for considerable courage, much tact, and a delicate sense of relative values. It is not alone that various crumbling precepts menace the foundations of our subject matter, but the erection of far stronger supporting buttresses of practice are essential to the endurance of the fabric. Can we truthfully maintain, for instance, that the exponents of home economics exemplify consistently in their lives the application of the principles they inculcate? For example, can students be expected to display profound conviction of really

vital truths when the teachers of right living feel no shame, but rather glory, in the consumption of hasty, ill-planned meals, in the curtailment of necessary sleep, in the maintenance of home or office at temperatures known to be detrimental to human efficiency, in the subservience to fashions described as conducive to "increased sexual crime?" Courage to revise social conventions, when shown to be detrimental, to reform age-old habits where proved devitalizing, is essential to reinforce the weak joints in the harness of humanity, to which home economics practice should be one of the contributory factors.

It is with the object of encouraging such consistency of practice that from now onwards a gold medal will be conferred annually at the Utah Agricultural College on that member of the graduating class in home economics who gives evidence of the most sustained and intelligent application in her daily life of the principles, to the study of which she has devoted four years. The award of this "Lois Hayball medal" will be made by a committee which includes representatives of the student body as well as of the School of Home Economics and the college physician. It is an example which may be fitly followed by all colleges, for by this means the scope and methods of the home economics course would be subjected to valuable scrutiny and recurrent criticism. To quote Hugo Münsterberg's dictum that "every science must reach a certain stage of maturity before the process of application is in place" cannot, at this era constitute an excuse for the builders of home economics. Now is the moment when there must be adequate evidence of that profound faith in the truth of the theory professed which results in the expression thereof in every phase of daily existence.

A too conservative respect for pioneer workers is apt to exist among those by whom this work of reconstruction should be undertaken, a respect which hesitates to discard material to which undue value was assigned under the glamour of early enthusiasms. Energy, too, is often lacking to substitute sound scientific facts for widespread popular fallacies; thus the task is neglected, because it is uncongenial and distasteful.

If faith is founded on facts it should show itself by its works. The leakages of health, money, time, energy, which still characterize students of home economics equally with their fellows must be stopped. Leakages such as careless diet, bad taste and unwise choice in dress, extravagance in details of expenditure, lack of regular exercise, faith in patent preparations of unknown drugs rather than in the cultivation of

the body's innate capacity for resistance; all threaten the stability of a structure primarily designed for the advancement of health and the right regulation of daily life in the home.

That the destructive tendencies of modern existence must be controlled and neutralized by the constructive intelligence of trained homemakers is an accepted platitude. It is the will to do, the exertion of necessary effort, which are wanting.

The second aspect of reconstruction, that of expansion, calls for no less urgent emphasis in the field of home economics. All unconsciously the tendency has been to restrict rather than to expand its scope; to limit its subject matter to the three groups of domestic needs (food, clothing, and shelter) rather than to enlarge its borders to embrace every aspect of human life exhibited in the home. The relation of each home and its occupants to the community, nation, and world at large, needs constant emphasis if young people are to perceive how far-reaching and enduring in its effects is each humble, domestic duty. In a country where a premium is placed on individuality and where each home is considered the concern solely of its owner, this communal responsibility calls for very forcible inculcation.

Reconstruction has been defined as the rebuilding of the life of humanity. Popular sentiment accepts the home as the cradle of human life and yet sees no contradiction of terms when statistics demonstrate the annual loss in this "cradle" of at least 300,000 babies within a few months of their birth. There is no evidence of public or domestic shame when the facts are made known that the homes of this country are responsible for about fifteen million physically defective children of school age, and for the fact that thirty per cent of the young men of an age for military service were incapable of response to the call. It is in these "homes" also that tens of thousands of young children die each year from entirely preventable causes; it is from them that a steady stream of recruits is contributed to the army of criminals and insane. What a reflection on the teachers and students of home economics! For it is the parents of the population who are responsible for the serious diminution of national vitality, for the menace of so many low-powered lives, for the existence of so many incompetent citizens.

The whole conception of home economics must be expanded from that of the study of cooking, sewing, and cleaning, important as this is, into a realization of its actual scope—the right care and conduct of human life in the home. Its details of essential application must be

set in a broad frame of human needs; the rights of democracy must be more closely and continuously linked with its equally weighty responsibilities.

All credit is due to the pioneers who laid the foundations of our subject; our debt to them is heavy and can only be discharged if, in our turn, we extend the original framework to include the mass of material which has been collected since they passed their work on to our hands. I venture to think their vision would have been keen to detect the shifting of values, as fuller light floods the twilight in which they labored. Their convictions would have spurred them to the effort called for if the results of modern science are to be dovetailed effectively into the original structure, so that it may be perfect and entire in its adaptations to human requirements.

Benjamin Kidd tells us that the process of human evolution has passed through the individual to the social stage; an era which calls for the gradual perfecting of humanity by fostering every quality contributory to collective efficiency in all human institutions. Since the civilized home is the highest product of civilization, the sole test for the efficiency of our home economics methods must ever be the quality of human material produced in these homes. The application of this test in the present year will surely prove the most conclusive argument for judicious reconstruction and suitable expansion in our home economics methods if we, its exponents, are to respond to the world's appeal for reinvigoration.

United States Commissioner of Labor Statistics states that results of investigation of relation of cost of living to public health show that "from all the evidence at hand it seems probable that [wartime] changes in diet have resulted beneficially rather than harmfully to the health of the working population. Real wages have probably not fallen. Budget schedules indicate a falling off in the use of meat and an increase in the consumption of vegetables.

CHANGES IN FATS ABSORBED BY FRIED FOODS

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The literature concerning the decomposition products of fats is meager. Furthermore, most of the references are of interest to the commercial chemist and paint manufacturer and throw no light on the subject of what happens to fats when foods are fried in them.

Several investigators report changes in heated edible fats. Some results of Fulmer and Manchester,[1] which agree with those previously reported by Holde and Pelgry and by Tortelli and Ruggeri (cited by Tolman and Munson[2]), show that the iodine number of cottonseed oil decreases on heating for thirty minutes from 110.1 to 108.1 when the heating is done at 180°C, and to 106.3 when heated at 270°. The acidity changes under similar conditions from 0.06 per cent to 0.054 per cent and 0.880 per cent, respectively, for 180° and 270°. If lowering the iodine number is considered as a rough indication of oxidation, and increase in acidity as due to hydrolysis, it may be seen that these two changes, while distinctly measurable, are not very marked.

The first temperature (180°C.) comes within the range of temperatures ordinarily used in the deep frying of foods but represents the change in oil heated in a test tube and not dispersed through a food. Decomposition would be expected to proceed at a faster rate in a fat whose surface area was thus increased. Blunt and Feeney[3] found that the presence of a finely divided foreign substance such as flour or charcoal, lowered the temperature at which "smoke" became visible in a pan of heated fat, and this fact they attributed to increased surface area.

Masters and Smith[4] report the changes in chemical constants of butter fat and cottonseed oil baked with flour as a pastry. The iodine number of their cottonseed oil diminished from 106.5 to 89.3 when the oil was extracted from some over-browned, thin pastry. This was the most marked of the numerous changes they reported. The changes in the butter fat were somewhat less than in the cottonseed oil, and the initial acidity had also been less.

[1] Fulmer, E., and Manchester, T., The Effect of Heat Upon the Physical and Chemical Constants of Cottonseed Oil. *Jour. Amer. Chem. Soc.*, 30 (1908), p. 1477.

[2] Tolman, L. M., and Munson, L. S., Olive Oil and Its Substitutes. *U. S. Dept. Agr., Bur. Chem. Bul. No. 77.*

[3] Blunt, K., and Feeney, C. M., The Smoking Temperatures of Edible Fats. *Jour. Home Econ.*, 7 (1915), p. 535.

[4] Masters, H., and Smith, L., The Changes in the Character of Fats During the Process of Cooking. *Analyst*, 39 (1914), p. 347.

It was not possible, they reported, to make a statement as to the mechanism of the changes, though hydrolysis certainly did not take place to any great extent. The changes were slight unless the pastry was very thin or overbrowned.

While it is an accepted fact that acrolein is formed during the decomposition of fats by heat and is present in the smoke of scorching fat, the literature does not reveal any proof that acrolein has been isolated from fried foods nor even that substances giving an aldehyde reaction have been demonstrated. Acrolein is such a reactive compound that failure to isolate it would not be surprising, and even though it were present in fried foods, it would probably be there in very small quantities.

The literature on the amount of fat absorbed in frying is also meager. Holmes and Lang[5] state, though without giving experimental data, that there is a different temperature for each of the various facts at which the least absorption takes place in doughnuts. Williams and Gray[6] state that greasiness is somewhat dependent upon the kind of fat used but much more upon the food to be cooked and the temperature employed. The amount of cottonseed oil absorbed by doughnuts fried for five minutes at 200°C. is reported by McKee[7] as varying from 34 per cent in a standard recipe to 45 per cent in a very rich one.

Whether fats so altered in their chemical constants by high temperature are utilized by the body in the same way as unheated fats is a question which very naturally arises. Langworthy and Holmes[8] report high digestibility of some animal and vegetable fats in which heating was carefully avoided; and Smith, Miller, and Hawk[9] found hydrogenated cottonseed oil to be as satisfactorily utilized by normal adults as lard. The latter investigators fed their fats in fried potatoes.

All the points mentioned thus far are ones which need investigation—the amounts of different fats absorbed by various types of fried foods under different conditions of time and temperature; the kind and extent of decomposition which takes place in the fats absorbed; the effect of

[5] Holmes, A. D., and Lang, H. L., Fats and Their Economical Use in the Home. *U. S. Dept. Agr. Bul. No. 469* (1916).

[6] Williams, A. W., and Gray, C. E., Fats and Oils in Cookery. *Univ. of Ill. Bul. No. 47* (1917).

[7] McKee, M. C., Fat Absorption in Frying Doughnuts. *Jour. Home Econ.*, 10 (1918), p. 18.

[8] Langworthy, C. F., and Holmes, A. D., Digestibility of Some Animal Fats. *U. S. Dept. Agr. Bul. No. 310* (1915); and Digestibility of Some Vegetable Fats. *U. S. Dept. Agr. Bul. No. 505* (1917).

[9] Smith, C. A., Miller, R. J., and Hawk, P. B., Studies on the Relative Digestibility and Utilization by the Human Body of Lard and Hydrogenated Vegetable Oil. *Jour. Biol. em.*, 23 (1915), p. 505.

this decomposition on the digestibility of the fat. This paper gives some experimental data on the first two points.

EXPERIMENTAL

In the experiments described in this paper, potato chips and a flour mixture were fried in lard and in Wesson oil to determine the amount of fat absorbed and the extent of decomposition in the fat taken up during frying. The effect of changing the time and temperature of frying was noted. The degree of decomposition was indicated by changes noted in the fats extracted from the fried foods as compared with the original fat. The determinations made were for iodine number, per cent of free fatty acid, and relative amounts of reducing substance (acrolein, etc.). Bulk lard of good quality and Wesson oil were chosen as typical animal and vegetable fats.

Fried Potato Chips

Method of cooking. Potatoes are satisfactory for frying experiments because, on account of their low fat content and the ease with which they can be thinly sliced, they offer the minimum of complications and the maximum of exposed surface for the absorption of fat. Sound, medium sized, northern grown potatoes were used, without reference to any special variety.

All the frying was done in a two-quart, gray enamel sauce-pan with a diameter at the bottom of 6 inches; diameter at the top 8 inches; depth $3\frac{5}{8}$ inches; depth of fat $1\frac{1}{2}$ inches.

The potatoes were sliced on a potato-slicer to a thickness of 1 to $1\frac{1}{2}$ mm.; the slices were laid out separately on paper toweling until the surface water was absorbed, then turned and dried on the other side, the whole drying process lasting about ten minutes. The pieces were dropped, one at a time, into the hot fat, were turned almost continually with a wire egg-whisk until a medium golden brown color, then lifted out and drained on paper toweling. Only three to five slices could be fried at one time as more than this caused considerable variation in the temperature.

The frying was done at three different temperatures, 170°, 190°, and 210°C. The temperature varied only 3° above or below that recorded in the tables. No smoke was visible at any time during the frying in Wesson oil; the lard did not smoke at 170°C. but when it was being

heated to 190° for the second set of fryings, smoke became faintly visible at 175° and it smoked slightly during the frying at 190°. When heated to 210°, smoke became visible at 180° and the lard smoked violently all during the frying process. The same portion of fat was used for frying at all three temperatures and the fat drained free from sediment between the different temperatures. The fryings at all temperatures were not done in one day.

All the potato chips were presumably cooked to the same brown color although at some temperatures they were more evenly browned and of better appearance than at others, probably due in part to differences in the potatoes as well as to differences in temperature. The chips fried in lard at 170° and 190° were the best looking; those fried in lard at 210° and in Wesson oil at 190° and 210° were a little overbrowned on the edges before the center had thoroughly cooked. The chips fried in lard at 210° had a bitter burned taste though none of those fried in either fat at other temperatures had this flavor of burned fat.

It seemed to require a longer time to reach the desired brownness in lard than in Wesson oil at the corresponding temperature (see table 1). The whole time of frying was so very brief in all cases, twenty to ninety seconds, that this difference would not be noticed in frying under ordinary home conditions. This same difference in time was observed in a second series in which slices from the same potato were used in both fats, the fryings done one immediately after the other and the piles of fried potatoes compared side by side for color. The chips fried in lard and in oil were identical in color and appearance, yet it required 75 seconds to reach this color in lard and only fifty seconds in the oil (series II). Whether this time factor is really an important one and what the explanation of it may be, is not known.

Fat absorption. After frying, the potato chips were ground in a mortar, spread out on watch crystals and dried to constant weight at 50°C. The loss was calculated as moisture. The dried material was extracted for six hours with anhydrous ether in an Underwriter multiple extraction apparatus; the per cent of fat is calculated on the basis of undried weight.

The amount of water in the potato chips was very small, ranging from a few tenths of a per cent in those fried at the highest temperatures to about 1.5 per cent in the ones fried at 170°.

The fat absorption was about the same at all temperatures and in both fats (table 1). Absorption of the two fats differed usually by

about 2 per cent, and the Wesson oil series showed as much variation within itself. The per cent of absorption in Series II, where the same potato was used for both fats, was 34.94 per cent in lard and 34.18 per cent in Wesson oil. The average absorption in Series I was 37.66 per cent. The average of many analyses of commercial chips given in *Bulletin 28, United States Department of Agriculture* is 39.8 per cent fat.

The slight variation in fat content in the potato chips seems, therefore, to depend upon differences in the absorbing power of the potatoes themselves rather than upon differences between the lard and Wesson oil or between frying at high or low temperatures. Different conclusions are drawn from the experiments on frying dough mixtures (see p. 449).

TABLE 1

Per cent of fat absorbed by fried potato chips

SERIES	KIND OF FAT	FRYING TEMPERATURE	TIME OF FRYING	WATER IN CHIPS	FAT IN CHIPS
		degrees C.	*seconds*	*per cent*	*per cent*
I	Lard	170	90	1.21	38.95
	Lard	190	55	0.68	38.18
	Lard	210	20	0.10	38.87
	Wesson oil	170	50	1.65	36.51
	Wesson oil	190	30	1.04	34.40
	Wesson oil	210	20	0.34	37.10
II	Lard	170	75	Not determined.	34.94
	Wesson oil	170	50	Not determined.	34.18

Chemical changes in extracted fats. Methods used. To determine the chemical changes in the fat absorbed by fried potatoes, the fat from large quantities of chips, about 50 grams, was extracted with anhydrous ether in a large Soxhlet apparatus. The changes from the original which were observed in the iodine number and amounts of free fatty acids and aldehyde substances (acrolein, etc.) were taken as a measure of the decomposition of the fat. The iodine number was determined with Hanus' solution according to standard methods given by Leach, p. 489, and free fatty acids, calculated as oleic acid, according to Leach, p. 499. (Food Inspection and Analysis).

To show the presence of acrolein or other aldehydes and to give an indication of the relative amounts in the different fats, Tollen's alde-

hyde reagent was used (see Sherman's Organic Analysis, p. 34). One cubic centimeter of oil or melted lard was introduced into a slender 10 cc. graduate, kept warm in hot water, Tollen's reagent was added up to the 5 cc. mark, the tube shaken, and the relative amount of blackening noted after ten minutes. The whole series of fats was examined at one time to get comparative differences. The tube showing the most reduction, an almost immediate blackening, was called 10 and the others rated according to their amounts of reduction. These marked differences were noticeable in the aqueous layer in the tube. The fat layer

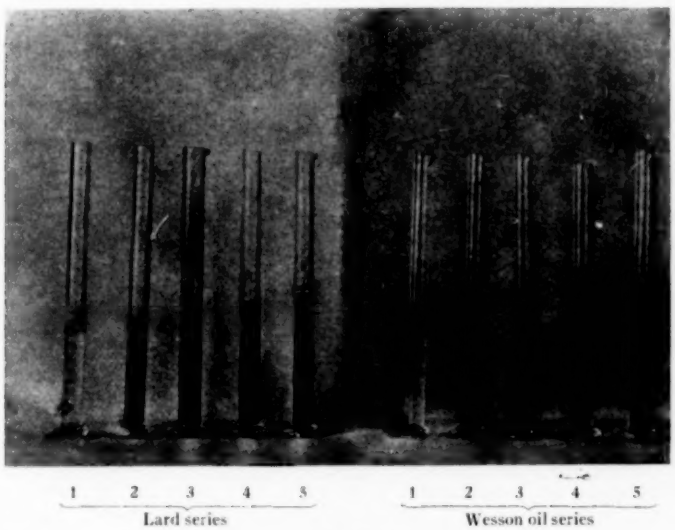

FIG. 1. SHOWING RELATIVE AMOUNTS OF REDUCING SUBSTANCES (ACROLEIN, ETC.) IN SAMPLES OF FATS. TESTED WITH TOLLEN'S REAGENT

In each series: 1, fresh unused fat; 2, fat in pan after all fryings; 3, extracted from potatoes fried at 170°; 4, extracted from potatoes fried at 190°; 5, extracted from potatoes fried at 210°.

in all the lard tubes was a dirty tan color and that in all the Wesson oil tubes a black-brown. The ether extract of 120 grams of raw potato was also tested and showed a noticeable but slight reduction of Tollen's. Since each cubic centimeter of extracted fat, however, contained the reducing substance of only about 7 grams of potato, the reduction of the potatoes themselves may be ignored.

Results. None of the changes in the extracted fats—iodine number, acidity, and aldehyde substances—was very marked and all three ran fairly parallel (table 2 and figure 1).

TABLE 2

Chemical changes in fats absorbed by fried potato chips

SERIES	KIND OF FAT	FRYING TEMPERATURE	TIME OF FRYING	IODINE NUMBER	ACIDITY (AS OLEIC)	REDUCTION OF TOLLEN'S
		degrees C.	*seconds*		*per cent*	
I	Lard, fresh			58.61	0.43	0.5
	Lard, extracted	170	90	48.98	1.15	10.0
	Lard, extracted	190	55	56.16	0.58	5.0
	Lard, extracted	210	20	55.08	0.60	2.0
	Lard, in pan after frying			54.16	0.54	1.0
	Wesson oil, fresh			104.5	0.06	0.2
	Wesson oil, extracted	170	50	104.0	0.12	0.5
	Wesson oil, extracted	190	30	103.6	0.18	0.5
	Wesson oil, extracted	210	20	103.2	0.22	2.0
	Wesson oil, in pan after frying			102.6	0.13	0.5
II	Lard, fresh, unused			61.91*	0.38	0.5
	Lard, extracted	170	75	59.57	0.46	7.5
	Wesson oil, fresh, unused			106.2	0.06	0.2
	Wesson oil, extracted	170	50	106.5	0.09	0.5

*Uncertainty about this value. True value probably higher.

TABLE 3

Changes in fats used in deep frying (Landenberger and Leavell, 1915)

	KIND OF FAT	IODINE NUMBER	ACIDITY (AS OLEIC)
			per cent
Landenberger	Armour Simon Pure Leaf Lard—Fresh	57.1	0.15
	In pan after frying	56.6	0.26
	Extracted from fried potato	54.0	1.31
	Extracted from sautéd potato	53.6	1.74
	Snowdrift—Fresh		0.06
	In pan after frying		0.26
	Extracted from fried potato		0.62
Leavell	Crisco—Fresh	84.75	0.14
	In pan after frying		0.17
	Extracted from fried potato	78.02	0.49
	Beef suet—Fresh	37.28	0.68
	In pan after frying	36.90	0.66
	Extracted from fried potato	36.58	
	Wesson oil—Fresh	111.4	0.02
	In pan after frying	109.4	0.04
	Extracted from fried potato	108.5	

Length of time of frying affected the amount of decomposition more than did increase in temperature. For example, the iodine number of lard extracted from the potatoes fried at 170° for one and one-half minutes dropped to 48.98 from an original value of 58.61 and the acidity increased from 0.43 per cent to 1.15 per cent. At the much higher temperature for only twenty seconds, the iodine value fell only to 55.08 and the acidity rose to 0.60 per cent. The acrolein test was also markedly stronger for the lard extracted from cooked potatoes. Figure 1, presenting a series of the acrolein tests, shows the different intensities of this reduction reaction. With another potato and a different sample of lard (series II), the three values changed considerably but not so much as in series I.

The Wesson oil showed less decomposition than the lard. There was so little change in the oil at any temperature, that any influence of time of frying was negligible. The extreme change in iodine number in the whole Wesson series was from 104.5 to 102.6. The acidity at 210° rose to 0.22 per cent but even this was only one-half the acidity of fresh, unused lard. The high initial acidity of the lard probably hastened its further decomposition.

The color of the extracted fat was not necessarily an indication of the amount of decomposition of the kind measured by iodine number, acidity, etc. The lard at 170° which showed the greatest change in its three factors, was white and fresh-looking while the other lard samples were darkened in color but were comparatively slightly changed. Slight murkiness and darkening of color were all the noticeable differences in the appearance of the Wesson oil and this was much the same at all temperatures.

These results agree in general with others obtained a few years ago in this laboratory by Loraine Landenberger and by Gladys Leavell. Their data on potatoes fried in snowdrift, crisco, Wesson oil, lard, and beef suet showed that the changes in the fats absorbed by the foods were greater than those in the fat in which the material was fried. The lowering of the iodine number was coincident with the increase in free fatty acid. They fried larger quantities of potatoes at one time than were fried in the writer's experiments and therefore had much more variation in the temperature of the fat during a single frying. Their conditions were much like those in home frying. A part of their unpublished results is given here (table 3).

Fried Dough Mixture

The results with fried potatoes needed further confirmation with another type of food material. Some of the variations in the potato were very probably due to individual differences in the potatoes themselves.

A mixture of flour, water, baking powder, and salt, of such consistency that it could be rolled out on a board, was fried as doughnuts. This mixture had a constant composition throughout the experiment and could be used for results on long-time frying without burning, as the potatoes could not. The dough made possible conditions similar to those of frying doughnuts without introducing the variable factors in the fat of the egg, milk, and shortening, with which a doughnut is made.

Method of frying dough mixtures. Proportions used: flour (ordinary bread), 100 grams + 3 grams on rolling-board; Ryzon baking powder, 6 grams; salt, 2 grams; distilled water, 70 grams.

The dry ingredients were sifted together three times, then the water added slowly and mixed like biscuit dough with a spoon. To get a uniform thickness, the dough was rolled out on a floured board between glass rods 0.8 cm. in diameter. From the above proportions, 8 doughnut shaped pieces were cut and the scraps of dough discarded. The pieces were 5 cm. across with a hole of 2.1 cm. in diameter. A fresh batch of dough was made for each one of the series indicated in the tables and all four sets of fryings in one fat were completed in one period, the whole operation of mixing the doughs and frying taking about two and one-quarter hours.

Two or three pieces of dough were fried at a time, causing a variation in temperature of not more than 3° above or below that given in the tables. The pieces were turned continually during the frying and drained on paper. The time of frying was longer in this experiment than in that with the potatoes; two minutes were given as enough to just cook the dough and six minutes as about the maximum time ever used in frying doughnuts.

No smoke was visible during any of the frying in Wesson oil but the lard began to smoke at 185° and smoked violently all during the frying at 210°. After all the fryings were completed at 170°, the fat was drained free from burned flour and sediment before heating up to 210°.

The color of the dough fried in different fats at the same temperature

was practically identical. This dough browned very slowly as would be expected, since it contained no egg, sugar, or other substance to give it color; the degree of brownness could not be taken as an indication of when the dough was done as in the case of the potatoes. That fried at 170° for two minutes had a thin, soft crust, scarcely browned at all; that fried at 170° for six minutes had a deep greasy crust, light brown but moderately crisp. Frying at 210° for two minutes yielded a medium brown product, like a light colored doughnut, with a thin, soft crust. The only one with a good doughnut-brown color was the one fried at 210° for six minutes and this had a deep crust and was quite dry and crisp throughout, though not greasy.

It should be noted that the potatoes were fried to a certain degree of brownness at all temperatures and in both fats while the dough was fried for a definite length of time regardless of color.

Fat absorption. The dough was cut into small pieces with the scissors immediately after frying, was dried at 50°C., ground on a meat grinder, then dried again. The quantity of material for each part of the series (corresponding to eight pieces of fried dough) was extracted with anhydrous ether in a large Soxhlet apparatus and the ether extract filtered and evaporated. The moisture and fat are both calculated on the basis of the fried dough (table 4).

TABLE 4

Per cent fat absorbed by fried dough mixture

KIND OF FAT	FRYING TEMPERATURE	TIME OF FRYING	WATER IN FRIED DOUGH	FAT IN FRIED DOUGH	
				Moist basis	Dry basis
	degrees C.	*minutes*	*per cent*	*per cent*	*per cent*
Lard	170	2	29.73	14.45	20.56
	170	6	18.49	24.84	30.47
	210	2	24.00	10.82	14.23
	210	6	15.77	13.50	16.02
Wesson oil	170	2	26.87	14.95	20.44
	170	6	19.35	24.86	30.82
	210	2	29.67	7.90	11.23
	210	6	16.92	14.47	17.41

Time and temperature of frying caused a variation in moisture content in the direction expected. The amount of water was about 28 per cent after two minutes at 170°C. and only 18.5 per cent after six minutes at the same temperature. The moisture was lowest, of course,

after 210° for six minutes, only 16 per cent. The water content of the raw dough had been about 45 per cent.

Under the same condition of frying, the doughs absorbed approximately the same amounts of lard and Wesson oil. This is at variance with the statement of Holmes and Lang[5] that there is a different temperature for each fat at which the least absorption takes place. The absorption was least at 210° for only two minutes (about 10 per cent) and greatest at 170° for six minutes (about 25 per cent). Attention is called again to the constant absorption of fat by potato chips at all three temperatures used. With the dough, unlike the potatoes, long time and low temperature of frying mean more fat absorbed.

Chemical changes in extracted fats. Decomposition of the fat was measured, as in the potatoes, by the degrees of change in iodine number and amounts of free fatty acids and aldehyde substances (acrolein, etc.) (table 5). No corrections were made for the fat of the flour itself, since the quantity was very slight and the same amount was present in every case.

TABLE 5

Chemical changes in fats absorbed by fried dough mixture

KIND OF FAT	TEMPERATURE	TIME	LARD			WESSON OIL		
			Iodine number	Acidity (as oleic)	Reduction of Tollen's	Iodine number	Acidity (as oleic)	Reduction of Tollen's
	degrees C.	*minutes*		*per cent*			*per cent*	
Fresh			61.91*	0.38	0.5	107.0	0.05	0.2
Extracted from dough	170	2	61.87	0.44	2.0	106.4	0.14	0.5
Extracted from dough	170	6	58.76	0.58	10.0	106.5	0.14	0.5
In pan after frying	170		61.54	0.41	2.0	106.8	0.05	0.3
Extracted from dough	210	2	60.61	0.51	5.0	105.1	0.24	1.0
Extracted from dough	210	6	48.32	2.15	20.0	105.1	0.35	2.0
In pan after frying	210		60.69	0.40	3.0	105.7	0.08	0.5

* Uncertainty about this value; true value probably higher.

As with the potatoes, the lard decomposed very much more than the Wesson oil. The extreme change in the iodine value of the lard was from 61.91 to 48.32, and the most in the Wesson oil was from 107 to 105.1. The corresponding change in acidity was an increase in the lard from 0.38 to 2.15 per cent and in the oil from 0.05 to 0.35 per cent.

The decomposition increased very fast when the food was kept a long time in the lard and the increase was greater the higher the temperature.

The change went on very rapidly even at 170°; at the temperature of 210°, the iodine number of the extracted lard changed from 60.61 to 48.32 in four minutes and the acidity increased from 0.50 to 2.15 per cent.

The Wesson oil decomposed so slowly that even six minutes at 210° did not noticeably affect the properties of the fat. The fat in the pan in both cases, changed more slowly than that dispersed through the food.

Here again, the color of the fat did not completely indicate the kind of decomposition measured by iodine value, acidity, and acrolein. The lard from dough fried at 210° for six minutes was oily and greenish yellow and had a repulsive rancid odor. The one at 170° for six minutes had a marked rancid odor and showed marked changes in its chemical constants but was quite white and fresh-looking. The other two samples of lard, showing comparatively little change in chemical constants, were a deep ivory-yellow color but had little odor of rancidity. There was little change in the appearance of the extracted Wesson oil and never a pronounced rancid odor.

SUMMARY

A. Absorption of fat

1. The lard and Wesson oil were absorbed to approximately the same extent under identical conditions of frying. This was true in both potatoes and fried dough.

2. Potato chips, fried at the three temperatures 170°, 190°, and 210°C. absorbed practically the same amounts of fat; slight differences were apparently due to differences in the absorbing power of the potatoes themselves rather than to variations in fats and temperature. The potatoes were fried to the same degree of brownness at all temperatures, while the doughs were fried for definite lengths of time, regardless of color.

3. With the doughs, both temperature and length of time of frying determined the amount of fat taken up. More was absorbed when the cooking was prolonged and the temperature low.

B. Chemical changes in the fats absorbed

1. The changes in iodine number, acidity, and relative amounts of reducing substances (acrolein, etc.) in the fats extracted from the fried

potatoes and dough mixtures, ran fairly parallel. These changes were measurable, though seldom great.

2. Lard showed more decomposition than the Wesson oil.

3. Long cooking increased the decomposition even more than high temperature, particularly in the lard. For example, the lard extracted from fried doughs showed more decomposition after 170° for six minutes than after 210° for only two minutes. Decomposition was very marked after 210° for six minutes.

4. The fat absorbed by the foods during frying underwent greater changes in chemical constants than the fat in which the food was fried.

QUERIES

Does your grocer stand on the edge of the sugar and flour bins to take groceries from the shelves?

Is food protected from dust, flies and handling?

Are vegetables raised the required 18 inches from the floor?

Is food protected from cats and dogs?

Are bakery products covered during delivery to the shop?

If any one of these questions cannot be answered favorably, report the fact, over your signature, giving the name and address of the dealer. An effort will be made to assist him in correcting this condition.

The above was issued by the Food Department of the Women's Municipal League of Boston. Should not every city and town have a similar organization that would offer such help?

FOR THE HOMEMAKER

A PLAN OF SPENDING FOR THE HOME

PEARL MACDONALD

In Charge Home Economics Extension Service, State College, Pa.

The question of the financial administration of the household is one that has been discussed and taught in schools of home economics. It has been written about in magazines and papers by economists and business men. It has been the subject of public lectures and has had its place in the programs of women's clubs.

The majority of women, however, have never taken the matter very seriously. Very few have had training in the keeping of accounts and most have looked upon it as a burden. They have either never attempted to keep a household account book, or, if they have started, they have discontinued it after a time.

The higher cost of almost all commodities is causing women to see that they must plan much more carefully than hitherto, that they must know the intrinsic value of articles purchased, that they must select more wisely and use to better advantage the things needed in the household. Everywhere there is felt the need of better business methods. We are beginning to appreciate the fact that the same fundamental principles must be applied in carrying on the business of the home as are used by industrial or commercial firms.

The successful business firm must systematize every phase of its work, must know the purchasing power of the dollar, the values in machinery, in convenient arrangement of equipment, in processes and methods, in raw materials, in finished products, in time and human energy. The firm must constantly study changing conditions as they present themselves, readjust values when necessary, and improve the methods of work and the quality of products put out.

Practically the same problems present themselves to the woman at the head of the home. She is, so to speak, the business manager of the home. The house or home is her plant. She is concerned with the

arrangement and equipment of that plant to meet the needs of the family both as a group and as made up of individuals; with the organization and execution of the work in the plant; with the purchase and use of materials and supplies; with the administration of the family income.

The raw materials are the various commodities that are essential to efficient life of the family group. The finished product is the well-developed all-round citizen.

Just as no business firm can succeed without keeping books and knowing exactly where it stands financially, so no home, in these days, can be successfully financed and administered unless the woman in the home knows values, selects wisely, makes the best possible use of commodities and keeps some record of receipts and expenditures, the money expended being apportioned according to a definite plan of spending worked out to meet the needs of the individual family.

Every household should have such a Plan of Spending. It is difficult to work out a plan unless the woman has for a period of one year at least, and better for three years, a record of (1) the amount and kind of expenditures made and the value of each; (2) a classified list of expenditures so that she may know what is being spent for each group in the classification. The household account book should be so arranged as to give her this information clearly and easily.

The account book should provide for the following:

Spaces to show the total receipts of the household and the sources of such receipts, whether from salary, interest on investments, rents from properties, or goods sold, as, for example, the butter and egg money which the woman of the farm usually has for her own use.

A date column to indicate when moneys are received and expenditures made.

A column to record the amount and kind of articles purchased.

A column in which to place the value of articles purchased for the household, the term value having two interpretations; (1) the cost of articles purchased at the store (2) the amount that would have been received if the articles had been raised on the farm and sold from the farm or garden.

Columns for the classified expenditures grouped under such headings as the following: Food, Clothing, Operating Expenses, Property Expenses, Health and Unclassified Items, The Life of the Home.

Nutrition specialists are urging a larger use of milk and the products

of the dairy, of eggs, fruits, vegetables, and cereals, and a more moderate use of meat. Therefore, the following sub-divisions for food are suggested:

FOOD:

Meat: includes beef, veal, mutton, lamb, pork, and poultry.

Fish: includes oysters, clams, and fish of all kinds.

Eggs:

Milk and Milk Products (except butter): whole milk, cream, skim-milk, buttermilk, and various kinds of cheese.

Butter:

Fats Other Than Butter: Fat of meat as suet, lard, etc., olive and other vegetable oils and fats.

Fruits and Vegetables: All fruits and vegetables used, either fresh, canned, or dried.

Grain Products: Flours and meals of all kinds; bread, rolls, etc., breakfast cereals; hominy and rice; macaroni and spaghetti; crackers.

Other Groceries: All other foodstuffs not listed in any one of the other food groups, as coffee, sugar, spices, etc.

Items included in the other divisions of the classified list are as follows:

CLOTHING—Textile fabrics for making garments at home; ready-made garments; hats and shoes; other clothing as stockings, gloves, etc.; care, repair, cleaning and pressing of garments; dressmaking and tailor's bills.

OPERATING EXPENSES—Heat, light, ice, telephone, soap, laundry, wages paid for work in the house, renovation, breakage, and repairs.

PROPERTY EXPENSES—Rent (if property is not owned); (if owned) taxes, interest, fire insurance, water rent, repairs; car-fares, (if paid going to and from work), etc.

HEALTH AND UNCLASSIFIED ITEMS—Doctor, nurse, medicine, dentist; stamps, stationery, and any other expenditures not included in preceding groups.

THE LIFE OF THE HOME—This group includes (a) household furnishings, (b) investments, and (c) recreation, education and religion, since these are things that go to make up what may be called the *satisfactions* of life.

Household Furnishings: New furnishings, as furniture, linen (table and bed), rugs, curtains, etc.

Investments: Bonds, savings accounts, insurance (life and health), etc.

Recreation, Education, and Religion include: Church and benevolences, gifts, vacations, travel, picnics, theatre, books, magazines and papers, art, music, lectures. Car-fare other than trips to and from work.

The plan as outlined above has been worked out in A Home Account Book.[1]

The book has a summary page to record the monthly totals from which the yearly total is made. This page may also provide a form to compare the actual expenditures as made for the year and the suggested apportionment of the income according to standards worked out by economists.

A study and comparison of expenditures as shown by daily purchases and monthly totals will help the woman to make readjustments if she finds that she has overspent or underspent on any one group in the classification.

As a guide for the woman who has not been accustomed to keeping accounts, a sample page is included in this book showing how to enter items in the general column and to distribute them in the classified list, how to make the monthly totals and subtractions to determine how the account stands. To aid in listing articles in the right column the preface indicates the items belonging in each division of the classification.

No doubt, the work of keeping the accounts for the first two or three months will require a considerable amount of time on the part of the woman of the home. But, if it is made a part of the regular daily program, the accounting will be taken care of just as any other work of the household.

The work will bring its own reward. If expenditures are made according to a carefully worked out Plan of Spending, without question the result will be that a larger share of the income will be apportioned for the Life of the Home. This will make possible the broader and fuller life of the family group because more of the things may be provided that contribute to the "durable satisfactions" of life.

[1] Prepared by the Home Economics Extension Service, Pennsylvania State College. Price 55 cents.

THE PARTNER AT HOME

THE PARTNER AT HOME, through wisely directing her household, increases the family savings and serves the State, yet secures the comfort of her family, by contributing productive labor, by planning her use of time, by lessening the waste of material, by portioning the income. Saving is the household's financial service to the state. It safeguards the family and serves the nation.

Contributing Her Labor

Her household labor adds to the value of material. The work she does in cooking food, in making and repairing clothing, in cleaning the house, is productive labor. The difference in value of the raw material and the finished product is part of her contribution to the family income.

Her earning power may be increased. She may fit herself for a definite task by a part time vocational course; make money from poultry, eggs, butter, fruit, using the parcel post market; sell goods that she has canned; find other part time employment.

Her leisure may be invested in fuller life for the family—music, reading, recreation; in service to the community, making it a better place in which to live.

Planning Her Time

Due value is given to her time. She balances the time needed to save material against the worth of the material saved. She counts time as money, and saving time as saving money.

Her time is planned. She uses time to save time. Time spent in planning is saved in doing. Planning saves labor, saves materials, saves money. Better planning of their household work helped American women make products worth $68,000,000 for the Red Cross in 1918.

Saving Materials

She provides for her family right food, suitable shelter, adequate clothing, reasonable comforts.

She carries over war thrift into peace times.

She enlists her children in the care of all materials.

She teaches them care of public property, right use of public utilities.

She saves food material by thoughtful buying, by careful use.

She saves clothing by the stitch in time, by proper care.

She saves fuel and supplies by wise planning, by avoiding small wastes.

She salvages all household waste, making it available for other uses.

She asks from the community clean streets, clean air, clean water, that her carefulness be not discounted by community negligence.

Portioning the Income

She knows what the family income is.

She sets aside as savings a portion of all money received.

She makes a spending plan, deciding how much can go for food, for clothing, for house expenses, for recreation.

She makes a food budget, a clothing budget.

She keeps accounts to check her spending.

She makes a business of her buying. She knows her materials.

She plans her purchases and does not buy on impulse.

She takes account of stock and makes a list of her needs.

She chooses a reliable dealer. She checks up measures and weights.

She reads the labels on package goods and compares their cost with those sold in bulk.

She considers quantity versus small amount.

She considers the advantage of Cash and Carry, or Self Serving, stores in lessening the cost of goods.

She buys things when they are plenty, getting them for the least cost, and helping to keep prices down.

She knows that selfish demands raise the cost of living for all.

She gets full value for her money. She pays her bills promptly.

She watches the market lists in newspapers.

She asks that her community have Fair Price Lists.

She puts aside for future use extra money saved by good buying.

Serving the State

She is responsible for the wise management of 20,000,000 households.

Billions of dollars pass through her hands each year.

Her demands control American industry.

Her intelligence saves money for 20,000,000 families.

Her care directs the habits of 40,000,000 children.

Her wise control of her household trains her children in thrift, contributes to community savings, gives her a share in her government.

AN INCIDENT

ELVA M. DICKEY

I was gazing fixedly at two slender, insolently flirtatious young women, endeavoring to decide which had the prettier dress. They were fashion-plates, and while the garments were adapted to giddy and attractive youngness, there was grave doubt as to whether a staid and fat person of thirty-five would prove becoming to these particular styles. It was absorbing, this argument between fat thirty-fiveness and a fatally persistent youthful liking for ruffles—one of those wayward tastes which refuse to "grow-up" and become old along with the rest of one.

The situation was critical when I became aware of other ladies also interested in fashions, and, amused, I shamelessly "listened in."

"Mama, my dolly needs a new dress. I want to buy her one and make it up before she goes on her vacation."

"Well, I have no objection. What kind of a dress does she need?"

"I think she ought to have a nice dress; something pretty, and I could choose the pattern right now."

Then followed a very interesting period. This was a pretty dress, but did Dolly need another light dress? Didn't she already have enough afternoon and party dresses? Where was Dolly's vacation to be spent —in the mountains? What sort of clothes would she want? Surely light dresses enough for afternoon and evening, but she must not expect to wear that sort of thing all the time; dainty dresses would be ridiculous for mountain-climbing. And thus a more useful pattern was selected.

Then the material to be used was under discussion. Should it be of silk? Oh no! not at all advisable! Not even of dark silk? No; that might do nicely in town, but would not make a good "sport" suit. So it narrowed down to a good blue serge, with white collar and cuffs.

And I thought, as I watched the child-mother and the real mother walk away, "What a splendid thing! what a really fine thing!" The interest and patience of this mother was doing much. There was actual community of interest between herself and her little daughter; they were evidently good comrades. Moreover, in this selection of a doll's pattern and a half-yard of cloth, there had been a perfect lesson in buying. Quite unconsciously the little girl had absorbed valuable information on buying a new dress; the finding of a suitable material; the selection of good quality; the choice of right colors, and the real thrift of neither buying that which is unnecessary nor of taking the wrong thing merely because it seems attractive.

EDITORIAL

The Science Section.[1] The meeting of the Science Section at Blue Ridge emphasized chiefly two distinctly different lines of work—the questions of under-nutrition in children and of experimental cookery. Mary Harper, in charge of the food education work of the New York Association for Improving the Condition of the Poor, gave a stimulating paper on the first subject, with the most recent scientific and clinical experience on nutrition classes for children. The paper was enlivened by delightful tales of her children's attitude toward their own improvement. The discussion showed plainly an encouraging development of nutrition work in many parts of the country, rural and urban, north and south. The car load of cows, imported in more than one southern county as a result of the work of the county agent, is one excellent example.

The rest of the two sessions was devoted to the discussion of experimental cookery in both its manipulative and chemical aspects. Dr. Minna C. Denton, of the Office of Home Economics, reported on several lines of work in progress in the Experimental Kitchen in Washington, including a series of experiments on oven temperatures in cake baking, with the results shown by curves. A short paper on the same subject from Miss West of Milwaukee Downer College gave experiments based on Miss Denton's cake outline, showing the superiority of low oven temperature in cake baking. The report of Elizabeth W. Miller on vegetable cookery discussed the groups of coloring matters in vegetables, chlorophyll, caratinoids and flavores and xanthones, and their changes on heating with acid (the vegetable acids themselves or added acid) and with alkali (alkaline tap water or soda). Chlorophyll, for example, turns olive green with acid, and brighter green with alkali. Good flavor in vegetables is partly dependent upon volatilization of some substances. These volatile substances, from some vegetables at least, have been shown to contain acid and sulphur compounds.

[1] A general report of the meeting at Blue Ridge appeared in the August editorial columns.

Three papers on fat absorption and decomposition were presented. Elizabeth Sprague reported that the temperature at which various fats give off acrolein corresponds to their relative smoking temperatures. Dr. Agnes Fay Morgan and Rau Cozens gave changes in a number of fat constants before and after frying doughnuts in a fat, and also figures for the absorption of various fats in frying. Sybil Woodruff reported fat absorption in frying potatoes and a dough mixture at different temperatures and times, and differences in iodine number, acidity, and reducing substance (acrolein) in the original fat and fat extracted from fried foods.

Most of the papers are to be printed in the JOURNAL, and so are not summarized further here.

The value and method of teaching experimental cookery was discussed, most of the speakers considering it, if properly done, an important part of the training of the college student.

Several of the experimental cookery papers were partly the result of the plans for coöperative research. The Science Section hopes to develop this coöperative research further. The plan was suggested of having different individuals maintain a sort of clearing house for research in different lines. This person should be informed by members of the association of work which they may have in progress; she should stand ready to answer questions or give advice when she can, on her line, either as to subjects to be investigated or methods to be used, and in general to do all possible to further our coöperative effort.

Dr. Minna Denton, Office of Home Economics, has consented to serve in this capacity in experimental cookery, especially on the manipulative side; Dr. Katharine Blunt, University of Chicago, on the chemical side of experimental cookery problems; Dr. Ruth Wheeler, Goucher College, Baltimore, on adult nutrition. It is hoped that Dr. Amy Daniels, University of Iowa, Iowa City, will serve on nutrition of infants and children. Members who are doing work along these lines are asked to communicate with these women.

The chairman of the Science Section is desirous of bringing together any groups of workers doing similar work on these or other lines of which she may hear.

At the end of the meeting, Dr. Ruth Wheeler moved that the officers of the section be continued for a second year. The motion was carried.

KATHARINE BLUNT,
Chairman Science Section.

The Extension Section. The section was called to order at 9 a.m., June 26, with Agnes Ellen Harris in the chair. The morning was devoted to discussion of organization of home demonstration work. Dr. Bradford Knapp, chief of extension work in the South, gave an excellent report of the rise of home demonstration work, and its progress in the fifteen southern states during the last ten years, developing the fact that the character of the work was determined by the necessity for improving the economic conditions of the farm homes. The success of the work of the excellent women of the South is shown by the fact that throughout the South generally the work of home demonstration agents has commanded as great financial support as has the work of the county agents.

Florence Ward, in charge of extension work with women, North and West, followed with an account of the rapid rise during war years of the home demonstration service in the thirty-three northern and western states. Miss Ward introduced members of her staff in charge of special phases of States Relations Service. Miss Van Hoesen discussed the development of home demonstration service in the cities, and Miss Birdseye the duties of home economics specialists in extension service. Miss Hoover and Miss Frysinger outlined their special work on the staff.

In the absence of Miss Knowles of Iowa, who was to present the subject of state organization, Mrs. Jane S. McKimmon of North Carolina, gave an interesting account of the development of the present organization in that state.

The final discussion of the morning led by Dr. Knapp, Miss Ward, Miss Richardson, and Miss Stanley, concerned the Smith-Lever and Smith-Hughes work.

Miss Susie V. Powell presided over the Friday morning session.

The following home economics extension problems were presented: Home Demonstration Agents' Training Courses, The University of Illinois Plan, Miss Bunch, State Leader of Illinois; Miss Matthews of Purdue, Miss White of Ohio, Miss Hayes of Connecticut, and Mrs. McKimmon of North Carolina discussed various points in the plan presented.

A round table discussion of the types of home demonstration projects followed. Dairy Work, Leader, Jessie M. Hoover, Dairy Demonstration Agent, Bureau of Animal Industry, U. S. Department of Agriculture; Poultry Work, Susie V. Powell, Assistant Director in Charge Home

Demonstration Work, Mississippi; Clothing, Mabel Wilkerson, Textile Specialist, University of Illinois; Girls Clubs, Leader, Gertrude Warren, Boys and Girls Club Work, States Relations Service, U. S. Department of Agriculture.

Reports followed by committees appointed the day before. The Nominating Committee submitted the following report: Chairman, Miss Bunch of Illinois; Secretary, Mrs. Jane S. McKimmon of North Carolina.

The chairman of the committee to develop the policy for extension work submitted the following report:

Your committee on the policy of extension work respectfully recommends the appointment of the following committees for specific service during the coming year.

First, a committee to make a survey of home demonstration projects in cities. Chairman, Miss Hayes of Connecticut, assisted by Miss Neal of Texas.

Second, a committee to find out what is being done in definite training for extension workers; to encourage closer connection of the extension division with the college department of the institution of which it is a part; to outline a suggested course of study which will meet the needs of (a) agents who have had experience in the field, and (b) prospective agents: Miss Bunch of Illinois, Chairman; Miss Sales of New York, Miss Cresswell of Georgia, Miss McCheyne of Utah, Miss Scott of Tennessee, Miss Parrott of South Carolina.

Third, a committee to bring to the attention of the Research Committee of The American Home Economics Association research problems arising in the extension field, and to request the chairman of the American Home Economics Association to send to state leaders reports of problems in consideration in the different college laboratories. Chairman, Miss Kellar of Maryland; members, State Leaders of each of the forty-eight states.

On motion the report was accepted and passed on to the Committee on Resolutions for the American Home Economics Association.

A resolution from the textile section presented by Miss Birdseye, asking approval of the extension section was approved by vote.

Mr. Moran was introduced for a brief discussion of moving pictures as adding to recreation in extension service instruction.

The section adjourned to meet at the next annual meeting of The American Home Economics Association.

MAMIE BUNCH, *Chairman Extension Section.*

Resolutions. The following resolutions were passed at the Annual Meeting of the A. H. E. A. Other resolutions have already appeared in the JOURNAL. (See August Editorial and September, page 388.)

WHEREAS, The A. H. E. A. recognizes the unique opportunity of the Home Demonstration Agents to bring to the attention of the Association problems which require laboratory experimentation for their solution, and

WHEREAS, The Association appreciates the valuable services of the Extension Workers in securing in the homes of the country practical application of the principles of home improvement for which this organization stands, and

WHEREAS, The demand for extension service is far in excess of the supply of well-trained workers; therefore be it

Resolved, That the A. H. E. A. recommends the arrangement of home economics courses in colleges and universities, so that during the junior and senior years such electives may be chosen as will best fit the candidate for extension work to understand her field; that at least one unit in demonstration teaching be included in every teachers course, and that a special year be offered, open to graduates in home economics, providing part time for class instruction in the pedagogy of extension teaching; the details of field and office organization and part time in practice work in the field under the supervision of the extension division.

WHEREAS, The A. H. E. A. recognizing the great need for Home Economics education to safeguard, develop, and protect the interests of the American home so fundamental to a program of sound national life,

And realizing that the present provisions for the same are inadequate to meet the needs of the large groups of homemakers and future homemakers; be it

Resolved, That the A. H. E. A. urge that the present session of Congress pass the bill entitled "A bill to provide for coöperation with the states in the promotion of vocational education in Home Economics, and to appropriate money and regulate its expenditure."

That copies of these resolutions be sent to the Chairmen of the Senate and House Committees on Education and Labor, and be given to the press.

Finally, in recognition of our enjoyable week at Blue Ridge, be it

Resolved, That the Secretary be asked to express for the A. H. E. A. thanks to Dr. Weatherford of the Blue Ridge Association and his staff of fine young men and women whose kindly thoughtfulness has helped to make our stay so delightful; and especially to Miss Brooks and Miss Davis, whose able management of the dining hall proves the value of our institutional division.

That an expression of appreciation be recorded, of the cordial hospitality of the entire Southern group, and gratitude for the additional profit and pleasure we have enjoyed from the meetings of the Southern Home Economics Association.

That a friendly fellowship be expressed for the other groups in conference here, whose work for the development of a better citizenship is not unrelated to our own.

That a special vote of thanks be accorded the Program Committee and all who contributed to the success of their effort, for so arranging the program as to allow an unhurried enjoyment of all the helpful and inspiring messages it provided.

COMMENT AND DISCUSSION

To the JOURNAL OF HOME ECONOMICS:

I read with interest the remarks of Louise T. Montgomery in your June issue, under Comment and Discussion. I have the subject of Basement Laboratories so at heart that I should be very glad if you would find space in your journal to use the enclosed matter. My own practical experience, and my visitations and investigations have given me data sufficient to most strongly condemn basement rooms for teaching purposes. If through your JOURNAL anything can be accomplished in the abolishment of basement rooms for teaching, much will be done for the cause of home economics.

In two cities, one of 65,000 population, and the other 100,000 population, I introduced the work of home economics some years ago. In both of these instances the work was conducted in basement rooms. Before going to these cities to take up the work, I was informed upon inquiry that sunny and pleasant quarters were available for this new department. The cold truth was revealed to me later.

Even in the early or pioneer days of home economics, it was not excusable to place this work in basements. If basements had to be used because of lack of space then these should have been used interchangeably with other lines, so as not to require one instructor to remain in these quarters more than one teaching period. This same adjustment could be employed at the present time. This is, however, not the best or ideal solution of the problem. I do not think that basement rooms should ever be used for teaching space; let this space be used for other purposes. Rather cut down the teaching period of various branches,

or lengthen the teaching day than to use basements; a touch of the Gary System would help solve the problem.

Those who have conducted work in basements, know something of its extreme hardships and difficulties. It means working in cold, damp, and often unsanitary surroundings, amid noise and clatter from various sources. At the present time when new buildings are being erected there is no possible excuse for using basement rooms for teaching. Wherever new schools are being built, the work in home economics should be given the choice rooms, and most decidedly on upper floors. This work should be housed where there is good light, good ventilation, proper heating, possibilities of good sanitation, and opportunities for attractiveness and dignity.

It has long been recognized that food is a most important factor in the health and welfare of the individual. Good clean food makes for good citizenship.

Placing this work in basements makes it difficult to inculcate, in the minds of the less fortunate, higher ideals of cleanliness and sanitation—little is given to them for which to strive; to the more fortunate or well to do, basement laboratories are repulsive, and do much to hinder coöperation between parent and teacher.

The most efficient teaching cannot be secured from individuals whose health is below par. To keep a teacher well and healthy she must be given the proper surroundings. Basement rooms do not give this. I speak from experience of long standing on hard cold cement floors; of bad ventilation; of improper heating; of noise and clatter from furnace and engine rooms. Unpleasant surroundings furnish little incentive for vigorous teaching.

At the present day no teacher of home economics should ever accept a position until she knows absolutely the location of her work in the building; and if this work is assigned for basement rooms she is only being just to herself and pupils, and to the cause by refusing to fill such a position.

It is only through this persistent effort and display of moral courage on the part of home economics workers that School Boards will ever become educated on this point in question, and eventually make the basement laboratory a relic of the dark past.

JANE GOESSLING HAMMITT,
Wilmington, Delaware

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Household Engineering. By CHRISTINE FREDERICK. Chicago: The American School of Home Economics, 1919, pp. 527. $1.75. By mail of the Journal, $1.88. Text-book edition.

This volume includes not only everything given in Mrs. Frederick's earlier book, "The New Housekeeping," but also additional suggestions on efficient household management. The material is organized and arranged in twelve lessons and at the end of each lesson is a set of suggestive questions. At the end of the book is a fairly complete bibliography.

The book touches upon a wide range of household subjects and, as one would expect from the title, each phase of housekeeping is approached and dealt with from the standpoint of saving time, labor, and materials, or in the light of efficiency engineering.

Mrs. Frederick holds the attention by the contrasts she makes between old and new methods of work; for instance, she carries her point by comparing kitchens with very good and with very bad grouping of equipment; by presenting time schedules with and without order in dish-washing, with and without "change of shift" in cleaning, and with and without fireless cookers. Figures are also given to show the relation of the heights of individuals to the heights of working surfaces and lengths of handles.

The book is written in a vigorous style, is most suggestive, and ought to stimulate housekeepers so that they will be ready to try new methods of housekeeping so as to save time, labor, and materials.

SARAH J. MACLEOD
Home Economics Bureau, Society for Savings, Cleveland, Ohio.

Camp Cookery. By AVA B. MILAM, A. GRACE JOHNSON, and RUTH MCNARY SMITH. Portland, Oregon: The J. K. Gill Co., 1918, pp. 108. $.50. By mail of the Journal, $.53.

While the days for camping are nearly over for this year, this little book on Camp Cookery has permanent value, and may be used for class work as well as "on the road." Its first evident advantage, particularly for camp use, is that it is so light in weight that it will not add appreciably to the burdens of the "pack."

The arrangement of the book is good, the recipes sensible, and the suggestions for camp diet good. The book is evidently intended for the more or less permanent camp. To those who are accustomed to camp for a few days, or to make walking trips without permanent headquarters, the equipment and meals seem somewhat elaborate.

The most difficult part of all for the camper, the proper management and control of the fire, might perhaps receive even more attention than it has.

While the book might well be supplemented by those referred to in the preface, and, for a list of very light equipment, by Stewart Edward White's "The Forest," this little volume has a distinct place of its own, and will do excellent service.

The Well Baby Primer, a pamphlet prepared by Dr. Caroline Hedger, is delightful both in its make-up, its attractive printing and its charming baby pictures. It was especially designed to be of service in the Americanization program to teach English to the foreign-born woman, and at the same time to educate her in American standards of baby health. Yet, though it is a primer,

every young mother not only would be interested in it but would be helped by its simple, plain, direct statements. Instruction in feeding, in weighing, in bathing, and dressing is written so plainly that all who run may read. The last page contains the table of heights and weights of children furnished by the Children's Bureau. *Published by the Elizabeth McCormick Memorial Fund, 6 North Michigan Avenue, Chicago. Price, 15 cents.*

PAMPHLETS RECEIVED

Issued by the U. S. Department of Agriculture and Treasury Department:

Thrift Leaflets: No. 5, Saving Labor and Materials by Easier Laundry Methods; No. 6, How to Remove Stains; No. 7, Take Care of Your Clothing; No. 8, Saving Materials and Money by Special Cleaning; No. 9, Thrift in Lighting; No. 10, Thrift in the Choice, Use and Care of Kitchen Utensils; No. 11, Thrift in the Use of Fuel for Cooking; No. 12, Saving Fuel in Heating; No. 13, Saving Food by Proper Care; No. 14, Inexpensive Ways of Keeping Food Cool; No. 15, How Shall We Choose our Food? No. 16, The Weekly Market Basket; No. 17, Thrift on the Farm; No. 18, Business Methods for the Home; No. 19, Teaching Thrift to Your Children; No. 20, Thrift Standards for Boys and Girls.

Issued by the Iowa State College of Agriculture and Mechanical Arts:

Clothing Thrift. Emergency Leaflet No. 51, December, 1918.

Food for the Family. Home Economics Bulletin No. 10, March, 1919.

Short Cuts in Sewing. Janet G. Cation. Emergency Leaflet No. 53, May, 1919.

Steam Pressure Cooking for the Home. Nell M. Barnett and Elva V. Akin. Home Economics Circular No. 17, April, 1919.

Why Use Milk? Home Economics Circular No. 18, June, 1919.

Issued by the publishers listed:

Agencies for the Sale of Cooked Foods Without Profit. Iva Lowther Peters, Ph.D. Council of National Defense, Women's Committee.

Egg Substitutes and So-Called Egg Savers. Charles H. Lawall. Bulletin of the Pennsylvania Department of Agriculture, Vol. 1, No. 7.

Home Economics Education. Organization and Administration. Bulletin No. 28, Home Economics Series No. 2, Federal Board for Vocational Education.

Household Accounts. Marketing Series. March 1919, Bulletin 4, State Agricultural and Industrial League, Portland, Maine.

Household Budget Clubs. Velma Phillips, Tenth Series, No. 8, Teachers College Bulletin.

Malnutrition and Health Education. David Mitchell. Bureau of Educational Experiments, New York City. Reprinted from The Pedagogical Seminary, March, 1919, Vol. XXVI, pp. 1–26.

Report of the Canada Food Board. 1918. Ottawa, Canada.

Report of the Committee on Dietary and Food Supplies. Charles S. Pitcher. Reprinted from *The State Hospital Quarterly.* February, 1919. State Hospitals Press, Utica, N. Y.

A Rural Social Survey of Orange Township, Blackhawk County, Iowa. Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa. Bulletin No. 184.

Sanitation of Swimming Pools. March, 1919 Bulletin of the California State Board of Health.

The Soldier-Citizen and His Home Town. Eda Amberg and William H. Allen. Educational Bureau, National War Work Council, Y. M. C. A.

Tuberculosis Survey Number. March, 1919, Bulletin, N. Y. State Department of Health.

Wartime Changes in the Cost of Living. Research Report No. 14, February, 1919, National Industrial Conference Board, 15 Beacon Street, Boston, Mass.

NEWS FROM THE FIELD

Conference of Home Demonstration Agents, New Haven, Conn., April, 1919. At the opening session, each Home Demonstration Agent gave a five minute report on some project that she had developed particularly well or that was peculiar to her county or city.

Dorothy Buckley, Assistant State Leader gave a report of the intensive educational milk campaigns conducted in several cities of the state. Thousands of men, women, and children have been taught the various reasons why milk is such an important food.

Maud Hayes, Home Economics Specialist, reported on the twenty-four Institutes and Extension Schools, held the past session. The aim of these Institutes has been to link together the subjects of farm and home, the one being presented by a man, the other by a woman.

In presenting the Boys' and Girls' Club work, A. J. Brundage, State Club Leader, gave as its object "To Dignify Mother's and Father's Job." Speaking of the home and school as points of contact for club activities, he emphasized particularly the need of knowing community conditions. He urged that club workers gain the right conception of the boy's part in helping in the home.

Helen Bolan, Assistant Club Leader, showed how the Home Demonstration Agents could help with club work by acting as scouts, laying the foundation for clubs by interviewing interested persons, or by visiting certain schools.

M. Estella Sprague, State Home Demonstration Leader, outlined projects for the coming months: The state-wide campaign for preserving eggs, the milk campaigns, the question of ice shortage and consequent higher prices, and other means of food preservation. Efficiency surveys will be taken in about three hundred homes throughout the state to determine how modern are the methods and equipment employed. Other projects to be developed are Household Accounting, Home Grown Products for Winter Supply, and Americanization Work.

At the afternoon session Gertrude Van Hoesen, States Relations Service, U. S. Department of Agriculture, Washington, D. C., talked on the Home Bureau from the standpoint of organization. She stated that such an organization should be built up on the basis of existing conditions; it must start at the bottom and grow with the needs of the community; it must use existing organizations. The paramount need for such an organization is evidenced by housing conditions, ignorance of foreigners, and wages below decent living. More than fifty per cent of the children in the United States are below par.

Winifred Gibbs, States Relations Service, Department of Agriculture, Washington, D. C., talked on The Housewife as a Financier. The cost of living is no longer a question of standards but a choice of values. By keeping household accounts a housewife will be able to make estimates and comparisons which will aid her in determining the amount necessary for a definite item, so that she will not be spending for one item at the expense of another, unknowingly.

Jessie Hoover, U. S. Department of Agriculture, Washington, D. C., talked on Home Problems of the Country Woman. The two problems, Labor and Social Isolation, were met, and one solution offered—To save labor by using convenient equipment so that more time for pleasure would result. A speedometer was used to prove how many steps could be saved by using labor saving devices.

I. G. Davis, Acting Director of Connecticut Extension Service, told of the Relation

of the Home Economics Department to other Departments of the Farm Bureau. The fundamental principles of the Farm Bureau are to maintain a high type of farmers on the farm, to demonstrate and develop the possibilities and attractiveness of farm life, to demonstrate farm life as a contrast to city life. To this end farm life must be on a profitable basis and there should be mutual interest of the producer and consumer.

Mrs. Samuel Russell, Jr., Chairman of the Home Economics Committee in Middlesex County, talked on the Relation of Local Committees to the Work of the Home Demonstration Agent.

Mrs. Frank Blakeman, representing the Home Economics Department of the Eastern Division of National Granges, sent, through Mrs. Wallace Mitchell, State Chairman, the message to the conference that the Home Economics Committees are being formed in the Granges throughout the state and coöperation with the Home Economics Department of the Extension Service is desired.

On Friday morning there were special sessions held for urban and rural workers, when each agent had the opportunity of getting help on any particular project from the specialist present.

Roy Jones of the Poultry Department, Connecticut Agricultural College, discussed the ways in which the Poultry and Home Economics Departments may work together. He stated that 50 per cent was saved in money by using waterglass, and also that half the supply of waterglass eggs should be used by Christmas time.

Walter Stemmons, of the Publicity Department of Connecticut Agricultural College, emphasized the importance of close coöperation of the Agents with the newspapers.

Mrs. Evelyn Tobey of Teachers' College, Columbia University, demonstrated the making of a child's hat with inexpensive materials, such as gingham, chambray, and cretonne.

Guy C. Smith and Hugh Bruce Price of the Bureau of Markets Department, Connecticut Agricultural College, and Mr. Stack of the New Haven Bureau of Markets presented the subject of marketing. Four cities in Connecticut, Hartford, New Haven, Bridgeport, and Waterbury, are putting out daily reports of the markets. Two reports are given, one for the producer and one for the consumer. These reports help the housewife to buy to advantage.

On Saturday morning the conference visited the Connecticut Agricultural Experiment Station. Miss Ferry of the Protein Research Department gave an illustrated lecture on Food Experimentation with White Rats. Dr. E. H. Jenkins, Director of the Experiment Station, personally conducted the visitors through the Station.

War Service Acknowledged. The JOURNAL has been asked to publish the following expression of appreciation for services rendered.

Upon their separation from the service, the Surgeon General directs us to express to all members of the Army Nurse Corps, both regular and reserve, and to all dietitians, reconstruction aides, laboratory technicians, medical secretaries, and other women civilians who have rendered such valiant service with the Medical Department of the Army, his personal appreciation and that of the Department for their patriotic devotion to duty and the self-sacrificing spirit they have manifested in giving their assistance to the Department and the Army when it was so badly needed.

He regrets that it has not been possible to accept all the offers of renewed and continued service because of the great reduction of the Department personnel, and he hopes that all who can will continue their connection with the Depatrment through their membership in the American Red Cross.

JULIA C. STIMSON,
Acting Superintendent, Army Nurse Corps and Dean, Army School of Nursing.
LENNA F. COOPER,
Supervising Dietitian.